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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/331,763	06/25/99	NISHIDA	K 177/10027

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QM12/0524

EXAMINER

SANDS, R

ART UNIT	PAPER NUMBER
3729	5

DATE MAILED: 05/24/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/331,763

Applicant(s)

NISHIDA, KAZUTO

Examiner

Rhonda E. Sands

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 10-25, 27, 28, 30-32 and 34-38 is/are rejected.
- 7) ☒ Claim(s) 4-6, 8, 9, 26, 29 and 33 is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) ____.
3. ☒ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 20) ☐ Other: ____

DETAILED ACTION

Drawings

1. Figures 13, 14A and 14B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Specification

2. The disclosure is objected to because of the following informalities: Figures 15 (D-G) mentioned in the specification are not provided in the drawings.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 11 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear how the electrodes are formed **after** bonding from the specification.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 10-12, 24 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 10 recites the limitation "thermosetting resin sheet" in line 4. There is insufficient antecedent basis for this limitation in the claim.

8. Claims 12, 24 and 34 recite the limitation "thermosetting adhesive" in line 4. There is insufficient antecedent basis for this limitation in the claim.

9. Claims 13-25, 27, 30, 31, and 35-38 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: a positional alignment device, heating device, and bonding device.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

11. Claims 1, 2, 10, 12, 13-25, 27, 28, 30, 31, 32 and 34-38 are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent 5,874,780 to Murakami.

The claimed invention reads on Murakami as follows: Murakami discloses an electronic component mounting method comprising aligning in position electrodes (103) of a

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circuit board with wire-drawn bumps (107) with interposition of a non-conductive thermosetting resin (109); hardening with heat the resin while pressurizing the electronic component against the circuit board with a force of about 30 gf per bump. The elements in the claim are read in the reference.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami in view of United States Patent 5,749,997 to Tang et al.

Murakami discloses the invention substantially as claimed but does not disclose a thermosetting resin sheet having an anisotropic conductive film. Tang et al. teaches using an anisotropic conductive film in an analogous art for the purpose of compensating for deviations in planarity. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Murakami method to include an anisotropic conductive film in order to improve the electrical connection.

14. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 5,848,466 to Viza et al. in view of Murakami.

Viza et al. discloses the invention substantially as claimed but does not disclose

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a pressurizing force of at least 20 gf per bump. Murakami teaches using a pressurizing force of about 30 gf per bump in an analogous art for the purpose of deforming the bump electrode. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pressurizing force of 30 gf per bump in order to make a solid electrical connection.

Allowable Subject Matter


15. Claims 4-6, 8, 9, 26, 29, and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda E. Sands whose telephone number is (703)305-0952. The examiner can normally be reached on Monday-Thursday, 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lee Young can be reached on (703)308-2572. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3579 for regular communications and (703)308-7058 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1148.


Stephen F. Gerrity
Primary Examiner